3. In a system (100) having a multi-speed engine (20) with an air inlet line (22) connected to said engine, a Helmholtz resonator structure comprising:

a closed chamber (150-A; 250-A, 250-B) configured as a single dead end side branch connected to said line and defining a Helmholtz resonator (150; 250) continuously operatively connected to said inlet line via a restricted connection (150-1; 250-1);

means ((30,32) and (140, 152; 240, 252; 242, 262)) for attenuating noise in a plurality of frequencies by changing the frequency response of said Helmholtz resonator responsive to changes in speed of said engine;

said means for changing the frequency response includes at least one restricted connection (150-2, 150-3; 250-2, 250-3) which is selectively connected between said chamber and said inlet line.

7. A refrigeration system (100) having a multi-speed engine (20) with an inlet line (22) connected to said engine, microprocessor means (30) for controlling the speed of said engine, the improvement comprising:

a closed chamber (150-A; 250-A, 250-B) configured as a single dead end side branch connected to said line and defining a Helmholtz resonator (150; 250) continuously operatively connected to said inlet line via a restricted connection (150-1; 250-1);

means ((30, 32) and (140, 152; 240, 252; 242, 262)) for attenuating noise in a plurality of frequencies by changing the frequency response of said Helmholtz resonator responsive to changes in speed of said engine;

said means for changing the frequency response includes at least one restricted connection (150-2, 150-3; 250-2, 250-3) which is selectively connected between said chamber and said inlet line.

9. A refrigeration system (100) having a multi-speed engine (20) with an inlet line (22) connected to said engine, microprocessor means (30) for controlling the speed of said engine, the improvement comprising:

a closed chamber (150-A; 250-A, 250-B) configured as a single dead end side branch connected to said line and defining a Helmholtz resonator (150; 250) continuously operatively connected to said inlet line via a restricted connection (150-1; 250-1);

means ((30, 32) and (140, 152; 240, 252; 242, 262)) for attenuating noise in a plurality of frequencies by changing the frequency response of said Helmholtz resonator responsive to changes in speed of said engine; and

said means for changing the frequency includes a valve (152; 262) having only an open and a closed position.

The Board has specifically identified the last two subparagraphs of claims 3 and 7 and the penultimate subparagraph of claim 9 as requiring further clarification. It is believed that the Board also intended to include the last subparagraph of claim 9.

Claims 3, 7 an 9 are generic to the species of Figures 4-6 and Figures 7 and 8.

In claim 3 there is a single positive recitation of "means", namely "means for attenuating noise in a plurality of frequencies by changing the frequency response" (emphasis supplied) such that the subsequent recitation of "said means for changing the frequency response" clearly further defines the positively recited means.

In claim 7 "microprocessor means" is recited but it is believed that the foregoing explanation with respect to claim 3 applies.

Claim 9, like claim 7, recites "microprocessor means" but, as in the case of claim 3, it is believed clear that the recitation of "said means for changing the frequency" is a further

defining of "means for attenuating noise in a plurality of frequencies by changing the frequency response".

As stated at page 1, lines 20-22, "(t)he present invention modifies either the volume or the neck area of a Helmholtz resonator to change the frequency range to which the resonator is responsive". As stated at page 3, lines 4-7 "the tunable resonator is coupled to the engine speed control such that the resonator is set to a different frequency range when the engine speed is changed. The frequency range is changed by opening and closing necks and/or changing the effective volume of the resonator". At page 4, lines 7-11 it states that "(r)efrigeration system 100 is controlled by microprocessor 30 which receives a number of inputs such as the engine speed, the sensed ambient temperature, ... In operation, diesel engine 20 and compressor 10 are driven through controls 32 responsive to microprocessor 30". At page 5, lines 7 and 8 it states that "(v)alve 52 is driven by actuator 40 which is coupled to controls 32". At page 5, lines 18-21 it states that "(v)alve 152 is connected via shaft 140-1 to actuator 140. Valve 152 is moved by actuator 140 between the positions of Figures 4 and 6". At page 6, lines 8 and 9, it states "(v)alve 252 is driven by actuator 240 which is coupled to controls 32 and microprocessor 30 and driven thereby". At page 6 lines 14 and 15, it states that "(v)alve 262 corresponds to valve 152 except for being driven by actuator 242 . . .". At page 6 line 17 is states that "(a)ctuator 242 is coupled to controls 32 and microprocessor 30 and driven thereby".

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It is believed that identifying the claimed structure by its numeral equivalent from the drawings and providing the specific references in the text to the corresponding structure provides the request basis for interpreting the claims requested by the Board.

Respectfully submitted.
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